

# **EASTERN (ORLAND) RIVER**

## **MAINE**

PRELIMINARY EXAMINATION

REVIEW OF REPORTS



CORPS OF ENGINEERS, U. S. ARMY  
OFFICE OF THE DIVISION ENGINEER  
NEW ENGLAND DIVISION, BOSTON, MASS.

JANUARY 24, 1956

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REVIEW OF REPORTS

EASTERN (ORLAND) RIVER  
MAINE,

SYLLABUS

The Division Engineer considers that the limited present and reasonably prospective commerce and recreational boating on the Eastern (Orland) River do not warrant further consideration of the improvements desired by local interests. He therefore recommends that no further study of the Eastern (Orland) River be made in the interest of navigation at this time.

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DEPARTMENT OF THE ARMY  
CORPS OF ENGINEERS  
OFFICE OF THE DIVISION ENGINEER  
NEW ENGLAND DIVISION  
BOSTON, MASS.

NEDGW

24 January 1956

SUBJECT: Preliminary Examination (Review of Reports) of Eastern (Orland) River, Maine

TO: Chief of Engineers, Department of the Army, Washington 25, D.C.

AUTHORITY

1. This report is submitted in compliance with an item in Section 103 of the River and Harbor Act approved September 3, 1954, calling for a preliminary examination and survey of "Eastern River, at and in the vicinity of Orland, Maine;" and in compliance with the following resolution adopted March 30, 1955, by the Committee on Public Works of the House of Representatives, United States:

"RESOLVED BY THE COMMITTEE ON PUBLIC WORKS OF THE HOUSE OF REPRESENTATIVES, UNITED STATES, that the Board of Engineers for Rivers and Harbors be, and is hereby, requested to review the reports on Penobscot River, Maine, published as House Document No. 652, 71st Congress, 3rd Session, with a view to determining if it is advisable to improve the Eastern Branch in the interest of navigation at this time."

2. A report of preliminary examination scope was authorized April 21, 1955 by the Chief of Engineers.

SCOPE OF EXAMINATION

3. In the preparation of this report, consideration of the locality has been limited to office study of data obtained from existing records, from local representatives, and from a public hearing. No detailed field work has been undertaken.

DESCRIPTION

4. The Eastern (Orland) River enters the Eastern Channel of the Penobscot River from a northeasterly direction, at a point about four miles above the mouth of the Penobscot River, and about two miles below the Town of Bucksport.

5. The Eastern (Orland) River is a narrow, shallow stream, navigable for small boats at high water to the dam of the St. Regis Paper Company at the Town of Orland, about 2.2 miles above the mouth. The channel is crooked and unmarked, and for a short distance below Orland, it is bare at low water. The mean range of tide in the river is 10.2 feet. The locality is shown on U. S. Coast and Geodetic Survey Chart No. 311 and on the plan accompanying this report.

#### TRIBUTARY AREA

6. The Town of Orland had a population of 1,155 in 1950 and a total real estate valuation of \$478,090 in 1954, of which slightly more than 50 percent was non-resident. Farming, lumbering, fishing, and vacation-travel activities provide occupation for many residents in Orland and the smaller neighboring communities along the Penobscot. The major single source of income for residents in Orland, however, is employment at the St. Regis Paper Company plant in Bucksport, two miles to the west. The nearest metropolitan center is Bangor, about 20 miles further up the Penobscot river, the third largest metropolitan area in Maine, and the industrial, commercial, and service center for northern and eastern Maine. Route 1A passes through Orland on the cut-off of Route 1 from Stockton Springs to Ellsworth.

#### BRIDGES

7. There are no bridges crossing any portion of the Eastern (Orland) River under consideration.

#### PRIOR REPORTS

8. There are no prior reports on the Eastern (Orland) River. The Penobscot River, however, to which the Eastern (Orland) River is tributary, has been the subject of several prior reports, the earliest having been made in the 1870's. Pertinent data on more recent reports is tabulated below:

<u>Scope and Date of Report</u>	<u>Work Considered</u>	<u>Recommendation</u>
Preliminary Examination (Review of Report) Dec. 2, 1930, H.D. No. 652, 71st Congress, 3rd Session	Improvement of River up- stream of Bangor for navigation, in combina- tion with power develop- ment, flood control, and irrigation.	Unfavorable
Survey Report, April 27, 1906, H.D. No. 739, 59th Congress, 1st Session	Widening of channel at Bangor	Favorable

<u>Scope and Date of Report</u>	<u>Work Considered</u>	<u>Recommendation</u>
Survey Report, Dec. 10, 1906, H.D. No. 274, 59th Congress, 2nd Session	Improvement of South Branch of Penobscot River, at and near Frankfort, Maine	Unfavorable

#### EXISTING CORPS OF ENGINEERS PROJECT

9. There is no existing Federal project in the Eastern (Orland) River. However, there is an existing project for the Penobscot River. The original project for the Penobscot, adopted in 1870, and completed in 1880, provided for the dredging of obstructions in the river to a depth of 12 feet from Bucksport, about two miles above Orland, upstream to Bangor. The existing project for the river adopted in 1884, and supplemented by enactments to 1947, provides for a channel 22 feet deep from Bucksport upstream to Winterport, a distance of 6.0 miles; for straightening, widening, and deepening the channel to 15 feet near Sterne Mills and Crosby Narrows from 3 to 4.5 miles below Bangor; and deepening the harbor at Bangor to 14 feet, and widening it along the Bangor waterfront, giving an additional width of 100 to 300 feet for a length of 2000 feet. The major portion of this improvement was completed in 1913.

#### LOCAL COOPERATION ON THE EXISTING PROJECT

10. No conditions of local cooperation were prescribed for the existing project in the Penobscot River.

#### OTHER IMPROVEMENTS

11. No known improvements for the benefit of navigation have been made in the Eastern (Orland) River, either by local or by State interests.

#### TERMINAL AND TRANSFER FACILITIES

12. There is one public wharf on the Eastern (Orland) River. This is situated on the right bank of the river, about 300 feet downstream from the dam. At the present time, the wharf is in poor condition, the deck being rotted and broken. There are no other terminal facilities along the river.

### IMPROVEMENT DESIRED

13. In order to give local interests an opportunity to express their views with respect to improvement of the Eastern (Orland) River, a public hearing was held at Orland, Maine, on September 27, 1955. The hearing was attended by 10 persons, including 6 officials of the Town, 2 other Town residents, and 2 representatives of the St. Regis Paper Company in Bucksport.

14. Local interests expressed a desire for a channel with a depth of 5 feet at mean low water, and a width of about 20 feet, extending from Gross Point at the confluence of the Eastern (Orland) River with the Eastern Channel of the Penobscot River to the dam of the St. Regis Paper Company in Orland, a distance of about 2.2 miles. No requests were made for further improvement of the Penobscot River proper.

15. It was stated that alewife fishing is an important source of income to the Town of Orland, and to a number of the residents. The Town operates a weir located about 100 feet below the dam of the St. Regis Paper Company, and several additional weirs located downstream are owned and operated by private individuals. It was stated that in recent years the river has silted so that there is inadequate water at low tide to keep the alewives alive during their spring run, and that consequently several thousand bushels of fish die in the channel each year. In addition, it was stated that since fishing craft cannot operate at low tide, many of the fish which are caught deteriorate before they can be taken to market. Truck transportation of the fish has proved so expensive, it was claimed, as to be unprofitable.

16. Town officials believe that the desired channel will restore alewife fishing as a significant source of income for the town, which depends upon the operation of its weir to finance its consolidated school building. It was stated that some fish processing companies had expressed an interest in establishing plants at Orland, if the river were improved, particularly inasmuch as the alewives on the river are unusually large. Town officials also believe that the desired improvement will encourage the use of the river by other small fishing and some recreational craft. In addition, it is claimed that since the alewives provide a source of food for salmon and trout the desired channel will indirectly encourage sport fishing.

### COMMERCE

17. There are no records of any commerce on the Eastern (Orland) River. Local interests state that in the past, before the river became so shallow, it was used by two schooners hauling pulpwood, and by some boats engaged in taking parties out for pleasure, as well as by local fishermen.

### VESSEL TRAFFIC

18. There are no records of vessel traffic on the river, although it is known to be used by a limited number of small fishing craft.

### DIFFICULTIES ATTENDING NAVIGATION

19. The difficulties attending navigation in the river are those resulting from lack of mean low water depths adequate even for small fishing craft, and excessive narrowness of the channel at some points.

### WATER POWER AND OTHER SPECIAL SUBJECTS

20. The waterway is tidal. There are no problems involved in this investigation pertaining to water power, flood control, pollution, or related subjects. Local interests believe that the desired improvement would have a favorable effect on the alewife fishing by permitting fish to move freely up the river at all tidal stages during their spring run. Local interests further believe that the increased propagation of alewives will provide feed for salmon and trout.

### SHORE LINE CHANGES

21. The desired improvement would have no significant effect on the shore line of the river.

### DISCUSSION

22. The Eastern (Orland) River is a narrow, shallow stream entering the Eastern Channel of the Penobscot River from a northeasterly direction about four miles above the mouth of the Penobscot, and about two miles below the town of Bucksport. At the higher stages of tide, the river is navigable for small craft for a distance of 2.2 miles to the dam of the St. Regis Paper Company in Orland. Depths at mean low water along most of the navigable distance vary from 3.0 to 0.5 feet, except near the head of navigation, where the riverbed is bare at low water. The mean range of tide is 10.2 feet.

23. The Town of Orland, with a population of about 1,150 in 1950, and a real estate valuation of approximately \$478,000 in 1954, is one of several small communities along the Penobscot River downstream from Bangor. The principal occupations of the area are farming, fishing, lumbering, vacation-travel activities, and the manufacture of pulp-wood products. The main source of income for the residents of Orland is employment at the St. Regis Paper Company in the neighboring Town of Bucksport. Alewife fishing, earlier a more important source of income, has declined in recent years, but still constitutes a significant source of revenue for the Town through the operation of a town weir, operated with the permission of the State of Maine. The Town is located on U.S. Route 1A.



24. Local interests desire the dredging of a channel 20 feet wide, and 5 feet deep at mean low water, extending about 2.2 miles from the Eastern Channel of the Penobscot River, locally known as the Thoroughfare, to the dam of the St. Regis Paper Company which constitutes the head of navigation. In the past, the mean low water depths in the river were sufficient to permit its navigation at all tidal stages not only by fishing craft but also by two schooners engaged in the transport of pulpwood, and by several party boats. In recent years, the river has shoaled so that it cannot be navigated at mean low water even by very shallow draft fishing craft.

25. The most serious result of the decreased river depth for the economy of the town of Orland is its effect upon the size of the annual run of alewives and the taking of alewives along the river. The town of Orland owns and operates a weir for the taking of alewives, at the head of navigation, and other private weirs are located downstream. In the past, some 25 or 30 inhabitants were engaged principally in alewife fishing, and a substantial number of private weirs were located along the river. This fishing has considerably decreased in recent years, since the river has become so shallow that the alewives cannot live in it at low water, nor can fishermen operate their boats to transport their catches. Consequently, large quantities of alewives die at low tide during their spring run, and additional substantial quantities which are caught, deteriorate in value while fishermen wait for adequate depth to transport them. Transport of the catch by truck to the canning centers is stated to have proved unprofitable.

26. Local interests believe that the potential value of the alewife catch which the desired improvement would make possible would exceed \$20,000 for the town weir. It was stated in the public hearing that several fish processing plants had expressed interest in establishing at Orland if the river were dredged. The Town of Orland Annual Report for 1954 indicates that the gross value of the alewife catch at the Town weir for that year was approximately \$4,000, the net value being approximately \$1,450.

27. Benefits to navigation resulting from the desired improvements would be those accruing from the elimination of tidal delay for fishing craft, and the consequent elimination of deterioration of value of their catch. Although the potential value of the alewife catch along the river appears to be substantial, the number of craft presently engaged in carrying fish is very small. At the present time, fish are loaded from the weirs into two or three small craft, which carry the catch to the public landing where it is in turn loaded onto trucks for transport to fish plants. Were the desired dredging provided, some increase in the number of craft transporting fish would undoubtedly occur, since not only would the amount of the catch increase, but it would be possible for small craft to load fish from the weirs and transport them by water to larger factory

ships in Penobscot Bay. It is considered, however, that any increase in the number of craft would be severely limited by the depth and width of the proposed channel, and by the restricted type of fishing to be expected. The small width of the proposed channel is considered a serious limitation on potential navigation, nor is it practicable to dredge a substantially wider channel in view of the narrowness of the river itself at a number of points. It is considered that no significant benefits would accrue from the encouragement of recreational boating along the river, there being little recreational boating in the immediate area, and more adequate harbor facilities are available in Penobscot Bay and along the Penobscot River than would be provided in the desired channel in Eastern (Orland) River.

28. The principal benefits accruing from the proposed improvement of Eastern (Orland) River appear to be those which might develop from the increased propagation and preservation of fish life in the river, rather than those accruing directly to navigation. The present shallow condition of the river unquestionably results in large losses of fish annually, with consequent decrease in propagation. Continued silting of the river may decrease the value of the river as a source of alewives.

29. The length of the desired channel, and its present shallow depths indicate that the cost of the proposed improvement would be relatively high. The reported lack of conveniently available disposal areas, and the relatively remote location of the river would further increase the cost of the improvement. Prospective general and local navigation benefits accruing from the improvement would be limited.

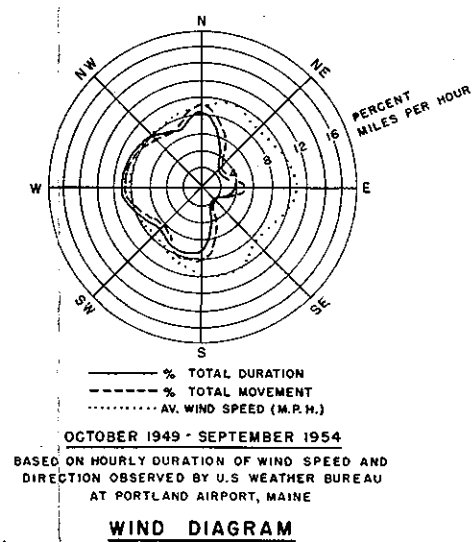
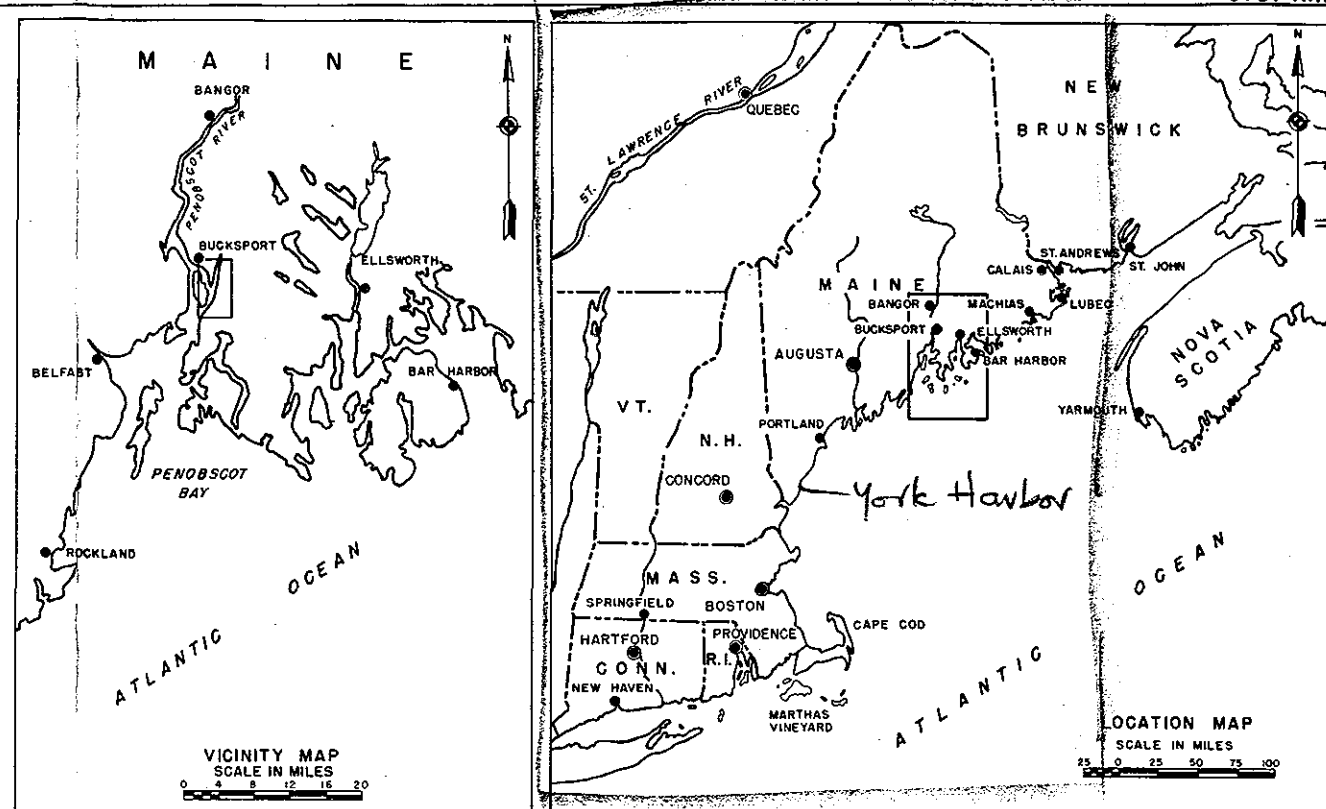
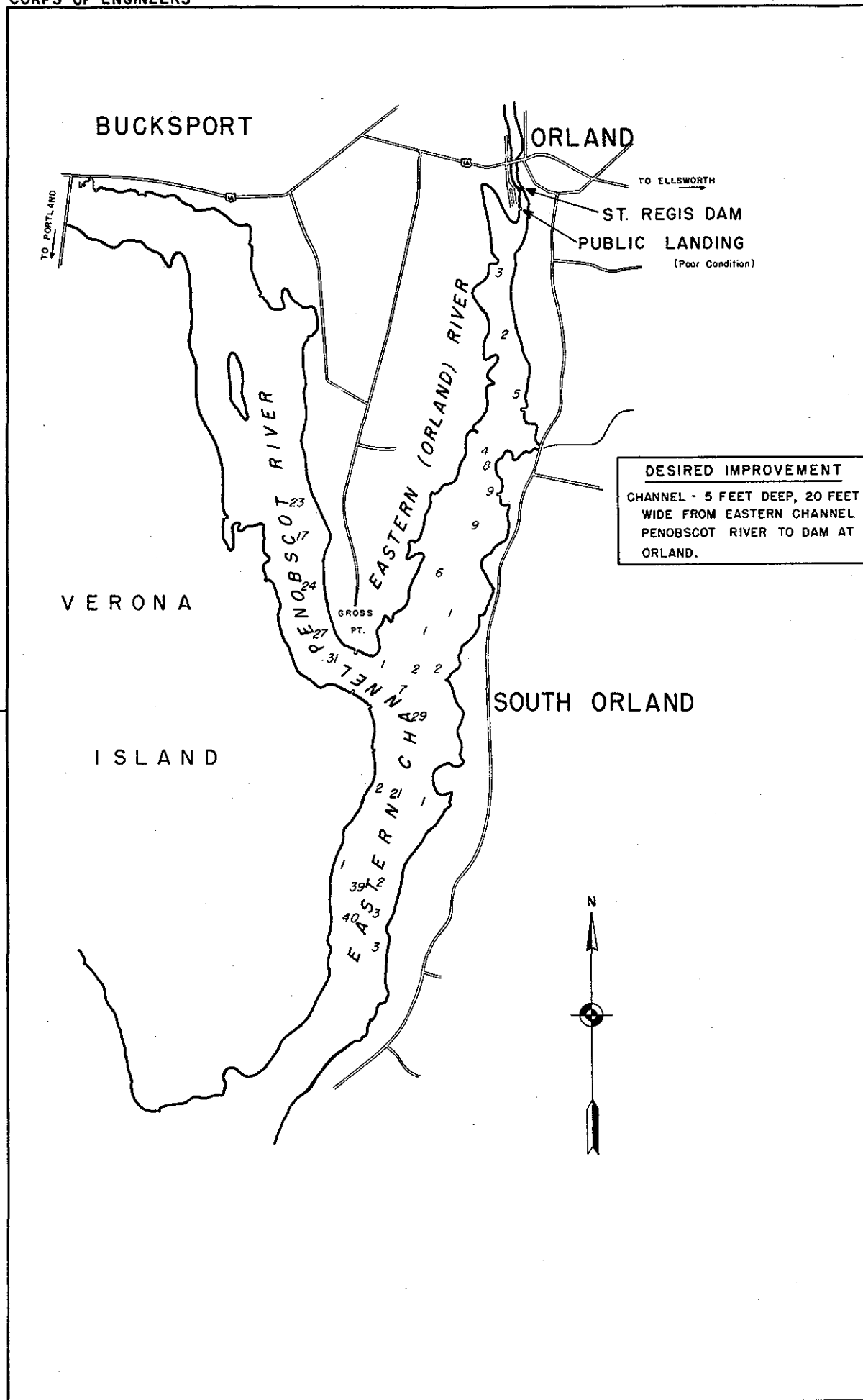
#### CONCLUSION

30. The limited present and reasonably prospective commerce and recreational boating on the Eastern (Orland) River does not warrant further consideration of the improvements desired by local interests. Preliminary evidence indicates that both general and local navigation benefits accruing from the desired improvement would be very limited, and that the cost of providing the desired channel would probably result in annual charges in excess of these benefits.

#### RECOMMENDATION

31. In view of the foregoing, the Division Engineer recommends that no further study of the Eastern (Orland) River be made in the interests of navigation at this time.

ROBERT J. FLEMING, JR.  
Brigadier General, USA  
Division Engineer



**NOTE:**  
Hydrography and topography from U.S. Coast and Geodetic Survey Chart No. 311.  
Soundings in feet.

# **EASTERN (ORLAND) RIVER MAINE**

IN 1 SHEET  
2000 1000 0 2000 4000  
SCALE IN FEET

NEW ENGLAND DIVISION, BOSTON, MASS. JAN. 21, 1956

APPROVED: CHIEF ENGINEERING DIVISION	APPROVED: LT. COL. C.E. FOR THE DIVISION ENGINEER
SUBMITTED: CHIEF PLANNING AND REPORTS BRANCH	TO ACCOMPANY PRELIMINARY EXAMINATION REPORT
DR. BY J.B.L. TR. BY J.B.L. CH. BY A.R.C.	DATED: JAN. 24, 1956

FILE NO. 1276 D-4-1